

SERVICE BULLETIN

AMATEUR RADIO

SUBJECT	TS-930S PLL Unlock	DATE	3.29.83
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Some users of the TS-930S have reported a problem where the PLL will sometimes not lock (digital display does not come on) if the power switch is turned off and on while XX.499.9 MHz is displayed, after the unit has warmed up. This may occur also in the FSK mode.

This may be caused by detuning of VCO-2 and VCO-3 in the PLL unit (X50-1880-00). This may be cured by a simple increase in the voltage obtained in the PLL alignment procedure. Make the following change in your service manuals.

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3. VCO-3	1)	f. counter	PLL	IC13-15	PLL	TC2	10,240,000Hz	± 10Hz
	2) FREQ : <input type="text"/> 19.9kHz To obtain this frequency 1st set dial to 20.0. Then using mic pushbutton depress button (DWN) one step at a time until the display just changes to <input type="text"/> 19.9 by this method can step frequency in each 10Hz steps.	DC V.M		Q32-C		T14	9.70V 4.2v	± 0.05V □ DENOTES STEP 9 (90Hz) or one step, before the next 100Hz (.xxx.1) Transition
	3) FREQ : <input type="text"/> 00.0kHz Use similar method in step 3. 2) PLL adjustment					Check		9.5V ± 0.5V
4. VCO-2	1) FREQ : <input type="text"/> 999.9kHz Use similar method in step 3. 2) PLL adjustment.	DC V.M	PLL	Q24-C	PLL	T15	3.00V 3.5v	± 0.05V
	2) FREQ : <input type="text"/> 000.0kHz For 10Hz level, tune VFO one step before <input type="text"/> 999.□□					Check		8.0V ± 0.5V 8.5v

- *Notes:
1. Be sure to adjust T14 and T15 of VCO-2 and VCO-3 whenever a PLL related circuit is serviced.
 2. This change applies to units before S/N 306XXXX.
 3. Installation time for this procedure is 30 minutes.

CLM